GEOGRAPHIC SCHOOL BULLETINS

OF THE NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON 6, D.C.

APRIL 25, 1955 VOL. XXXIII, NO. 27

Cradles of Civilization, No. 2: Egypt

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Fishing Season Opens for Alaska Bears

Everyman's University: The Land-Grant College

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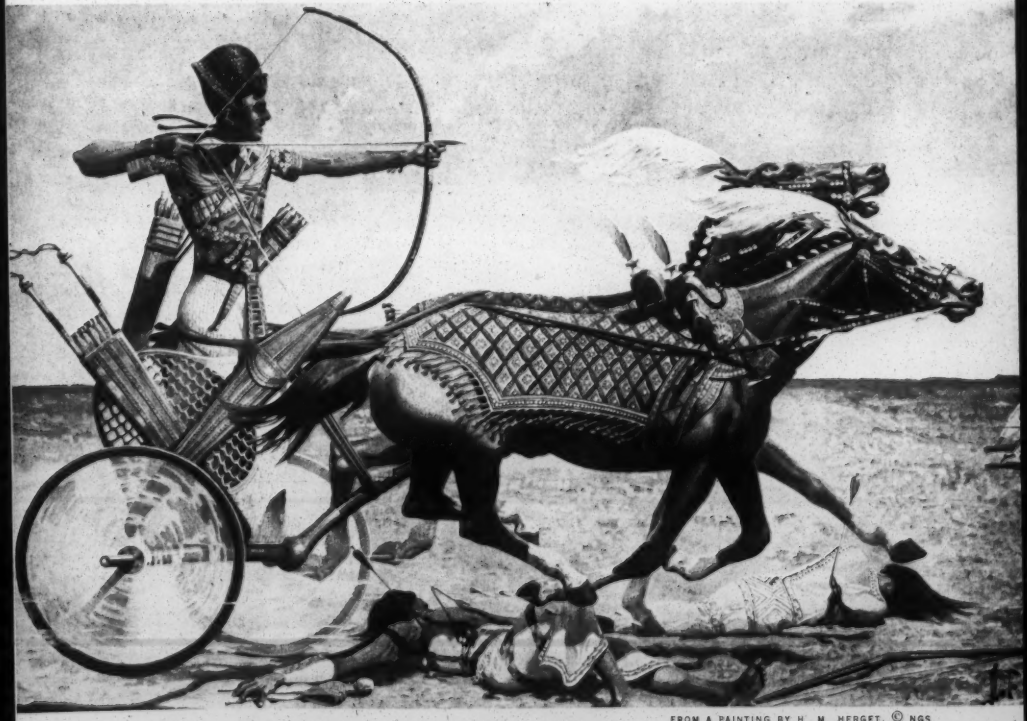

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Horses Came to Egypt by Way of Hyksos Conquerors. Restored Pharaohs of Imperial Era Used Them Expertly as a War Weapon, Smashing Syrian and Other Foot Armies

absolute monarchs—living gods. Yet any peasant, talented and energetic, could rise to surprising heights just as the Old Testament's Joseph advanced from slavery to a position second only to his pharaoh.

Gifted administrators and organizers, Egyptians developed massive, efficient labor forces to build huge monuments like the 479-foot-high pyramid of King Khufu (whom the Greeks called Cheops) of the Old Kingdom. Religion taught that immortality for all would be much the same as life—only a good deal more fun. So people cheerfully erected enormous tombs and stacked them with gifts and foodstuffs for the dead. Yet for centuries they used rudimentary tools to irrigate and till the silted bottomlands which fed the living.

Egypt's language was formal and rigidly grammatical. Writing, after developing at about the time of unification, barely changed for 2,500 years. Egypt's meticulous records, inscribed with frayed reed pens on papyrus scrolls and well preserved by the dry desert climate, allow archeologists to reconstruct daily life during much of the three dynastic eras.

It was not all the backbreaking toil of pyramid building. In the Nile marshes poor as well as rich enjoyed snaring wild ducks with folding nets stretched beside baited pools. Children, usually rid of the annoyance of clothing, played as exuberantly beside the peasant's plow as in the gardens (complete with wading pools) of the wealthy. Stone masons joked as they squared corners of limestone blocks for monumental structures.

The Old Kingdom lasted through six dynasties (families of kings), then crumbled as its nobles overshadowed a succession of weak rulers. Pretenders to the throne sprang up at Memphis and Ihnâysa el Madîna. Then warlords from Thebes, far up the valley, defeated a group of petty states and established the XIth Dynasty, about 2160 B.C.

This, the Middle Kingdom, was Egypt's feudal age, for the nobility was still powerful. But the new pharaohs were adept politicians, placating the peerage and leading the country to new heights. Commerce boomed, especially with central Africa whose natives shipped ivory and skins past Egypt's Nile forts.

Art flourished—the honest, skillful, dignified reproduction of life which is judged ancient Egypt's greatest contribution to the world. Paintings from this and other periods reflect, for example, the excitement of a tense wrestling match (the

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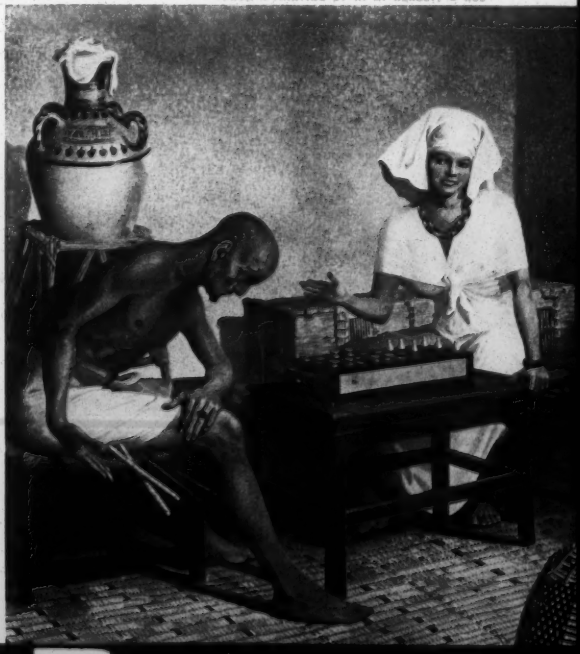

Home Life for This Egyptian Husband and Wife of About 1500 B.C. Is Like That Enjoyed by Families Today. They're Playing a Backgammonlike Game with Moves Determined by the Casting of Four Sticks. Expert Carpenters Built Their Furniture of Imported Wood.

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Cradles of Civilization, No. 2: Egypt

Flanked by a pet lion, enthroned amid the trappings of ancient Egypt's last great age, Ramesses II greets the king of the Hittites to conclude a treaty. Time: 1277 B.C. Scene: The muraled audience hall of a magnificent palace on the Nile Delta.

Best known of all Egypt's pharaohs, Ramesses II ruled 67 years, left behind at least 79 sons. Though kingly in appearance and reckless in battle, he suffered from a mania for publicity which led him to appropriate and put his name on most of Egypt's notable structures—giving the impression that he symbolized all his country's splendor. Actually, his deeds were not extraordinary; his long reign was a droplet in 27 centuries of Egypt's greatness. During this XIXth Dynasty Egypt started its decline to end an epoch of world history.

The story begins in 3000 B.C. when legendary King Menes, wearing the same kind of bowling-pin-shaped headdress as Ramesses, came down the Nile Valley to smash the delta armies and unify the rich land washed by 750 miles of the river. What was once a collection of tribes drawn to the Nile by lack of rain in northeast Africa's once fertile uplands became a nation. A 500-year period of development, the "Old Kingdom," was soon under way.

Descendants of Stone Age hunters, ancient Egyptians were handsome, slender waisted, athletic, their skins a light brown, their heads shaped long with clean-cut features and sparse beards. Their pharaohs were

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Six-Inch Piranha Makes Tiger Shark Seem Tame

MATO GROSSO EXPEDITION, INC.

Meet Public Enemy Number One of the underwater world—the diminutive, vicious piranha. Those razor-sharp teeth, multiplied by hundreds, lie in wait for flesh-bearing animals who stir the backwaters of the Amazon and its tributaries, or the rivers of Central America. Piranhas have killed more men than man-eating sharks, though the latter may be sixty times as big.

The midget murderer forages along tropical banks, not hesitating to attack cattle which have waded out for a drink. As soon as blood from the first tearing bite touches the water, throngs of ravening piranhas congregate in a matter of seconds, skeletonizing their victim. One tropical-fish collector who fell into a stream had several bites taken out of his shoulder during the brief instant while his companions were snatching him back into the boat. He was far luckier than most.

Naturalists call the pint-size killer "the embodiment of ferocity" and "probably the wickedest fish that swims. By the side of him the shark is a perfect gentleman." The experts are uncertain about the piranha's purpose in nature's scheme. Only the alligator can cope with it.

But it is an appetizing food fish for man if the angler uses a leader of triple-strand wire which those teeth can't bite through. Also, piranhas will allow the young fingerlings of another species to live in the same tank with them. Once their captive companions are grown, however, the Amazon assassin makes short work of them. The New York aquarium displaying piranhas found its exhibit short-lived. Most of the fish tore each other apart. Others, understandably, appeared to have died of fright.

References—*National Geographic Magazine*, Feb., 1949, "Sea Fever"; Nov., 1938, "Wonder Island of the Amazon Delta." The Society's 339-page *Book of Fishes* includes an illustration in full color of the piranha.

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City of the Dead—Servants Assure Their Noble Master's Comfort after Death with Gifts for His Tomb. Old Kingdom Pharaohs Have Forsaken Such Crypts for Pyramids.

holds would be familiar to modern grapplers). Similarly, sculpture depicts everyday human characteristics like a queen with one arm slipped around her husband's waist.

The Middle Kingdom collapsed when the delta fell before the onslaught of an Asian people from Palestine, the Hyksos, who probably had been a foreign element in Egypt's melting-pot society. For about 150 years (1730 B.C. to 1580 B.C.), Hyksos kings ruled. Again Thebes came to the rescue, its lords driving the Hyksos back to their country and sacking their towns. The XVIIIth Dynasty began with an urge for imperialism.

Egypt's New Kingdom saw a great empire stretching from the Nile's Fourth Cataract, far down in Africa, to the Euphrates River in Mesopotamia. New ideas seeped through the traditional Egyptian conservatism (at last the well sweep took some of the labor out of irrigation), and hard-ruling pharaohs like Ramesses II kept subjects busy on public projects.

But from the XIXth Dynasty to the conquest by Macedonia in 332 B.C., Egypt's power slowly sagged. A Libyan soldier was able to grab the throne —the Pharaoh Shishak, whom the Bible mentions in connection with Solomon. When fabulous Cleopatra IV ascended the dais, ancient Egypt was finished. Macedonia had ruled it for three centuries, Rome would soon seize it. Cleopatra herself was a Greek, last of the family of Ptolemy.

Next week: Greece

References—Egypt is shown on the National Geographic Society's map of Bible Lands and the Cradle of Western Civilization. Write the Society, Washington 6, D. C., for a publication order list. *National Geographic Magazine*, Dec., 1954, "Safari from Congo to Cairo"; Dec., 1948, "Sinai Sheds New Light on the Bible"; April, 1940, "By Felucca Down the Nile" and March, 1926, "The Land of Egypt" (out of print; refer to your library); "Daily Life in Ancient Egypt," published in the Oct., 1941, issue of the Magazine, now out of print, is available in the 368-page, cloth-bound book, *Everyday Life in Ancient Times. School and library discount price for Magazine issues a year old or less, 50¢; through 1946, 65¢. Write for prices of earlier issues.*

And this is his favorite lunch. After spawning season he must go back to a shrub and berry menu. An occasional furry little marmot relieves the monotony.

Mother bears teach cubs to fish usually in their second summer. In the inlets and islands of the peninsula they grow to three-quarter-ton monsters, nine feet tall on their hind legs—world's largest flesh-eaters.

For further information, see "When Giant Alaskan Bears Go Fishing," *National Geographic Magazine*, Aug., 1954.

AMOS BURG (CENTER AT RIGHT)
CECIL E. RHODE (RIGHT AND BELOW)

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U. S. FISH AND WILDLIFE SERVICE (ABOVE, DIRECTLY BELOW)

Fishing Season Opens for Alaska Bears

Huge Flesh-Eaters Use Claws, Not Fly Rods

When spring breaks through and salmon start up the Alaska Peninsula's choppy rivers to spawn, the huge Alaska brown bear happily resumes his favorite sport: fishing. Like human commercial fishermen, Bruin chooses a good spot and sticks to it—silent except for a growl or two to defend his claim.

Bears stand on wave-washed rock ledges to watch for heedless fish, or sit almost submerged in icy water and grab the salmon as they surge past. Br'er Ba'r (right) gingerly tests the temperature of a snow-fed stream. Then, absorbed as any angler, he strikes at a fat salmon. Victory! While a hopeful sea gull anticipates a taste, Bruin's curved paw transfers the catch to shore. If he were really hungry, he'd eat it on the spot.

"Not one step closer," say Bruin's hard yellow eyes (below), reminding the cameraman that Alaska's brown bear is far from cuddlesome, that his lunch is a private affair not to be disturbed by a clicking lens shutter.

And this is his favorite lunch. After spawning season he must go

school as a new departure in education—college training for the common man.

He envisioned, in every State, a college partially supported by the Federal Government and emphasizing agriculture and mechanical arts (engineering). They would be open to children of farmers and laborers as well as the wealthy. He told members of the House of Representatives about the college "in Michigan, liberally supported by the State, in the full tide of successful experiment."

His first attempt to get Federal aid for State colleges failed. President Buchanan vetoed his land-grant bill in 1859, saying control of education should be left to the States. But Morrill tried again and President Lincoln signed the bill in 1862. It provided for each State to sell United States public land to support colleges that would teach agriculture and mechanical arts, as well as other college courses, for "the industrial classes."

New colleges sprang up throughout the nation. Some legislatures made them part of existing State universities; others established them as separate schools.

Given their first opportunity for a college education, young farmers worked with instructors in crude laboratories and ill-equipped classrooms. They started crop and soil experiments on college farms, cross-bred animals and plants, studied cures for animal diseases. Experiment results passed from one college to another. Soon more Federal aid, provided by the Hatch Act of 1887, set up a chain of agricultural experiment stations located at land-grant colleges across the country. More teaching could be based on scientific research.

Carrying Morrill's aim of higher education for everyone still further, agricultural teachers bundled up classroom charts, books, and equipment, and left for rural meetings. Farmers met in schoolrooms, churches, and country stores to learn new agricultural practices developed at experiment stations. Railroad companies provided trains so that farm machinery, livestock, and poultry could be exhibited from town to town.

In the early 1900's farmers came in buggies and horse-drawn wagons to attend short courses at land-grant colleges. Their wives practiced new canning methods and learned how to make farm living easier at special home-economics meetings. Boys' and girls' clubs—forerunners of today's 4-H and FFA groups—grew up in many areas. President Wilson expanded these services in 1914 when he signed the Smith-Lever Act, making extension work a part of the land-grant colleges. County agricultural agents

NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

University of Hawaii, One of the Youngest Land-Grant Colleges, Stresses Study of Asian Problems, Oriental Languages, Biology and Science of the Pacific Ocean. The Modern Campus Lies in Honolulu Against Slopes of the Koolau Range. At This Crossroads of the Pacific, Student Activities Committees Provide a Practical Workshop in Human Relations for Students of Many Races.

Everyman's University: The Land-Grant College

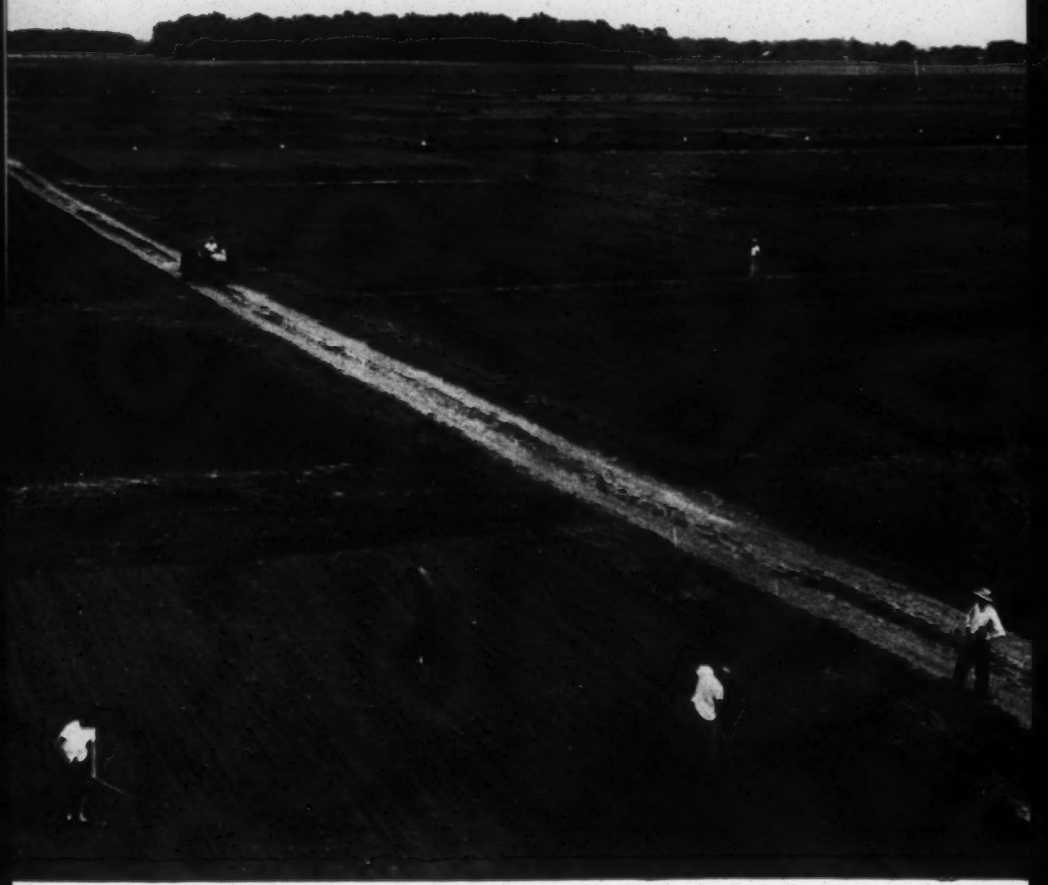
Almost a century ago some 60 Michigan farm boys near Lansing sloshed in ankle-deep mud, chopping trees and pulling up stumps. Near by stood three small buildings—a dormitory, a tiny brick stable, and a classroom hall. This was the start of Michigan State College, first State college of agriculture and model for America's land-grant college system.

Working in mosquito-infested woods three or four hours a day, this first class hacked out a 677-acre campus for ten cents an hour, payment for books and board. Six faculty members taught fewer than 20 subjects.

Today more than 15,000 students are taking part in Michigan State's year-long 100th-anniversary celebration. Founded February 12, 1855, Michigan State now boasts a $70,000,000 campus covering 3,000 acres and including some 130 permanent buildings. Visitors to its world-fairlike technological exposition next month also will see a gridwork of experimental cropland (below). It was plowed and planted by agricultural students, carrying on the purpose set by the Michigan legislature in establishing the tiny college.

Vermont's Congressman Justin S. Morrill saw the young agricultural

ANDREW H. BROWN, NATIONAL GEOGRAPHIC STAFF



tems. Students learning hotel management actually operate $2,500,000 Statler Hall, a real hotel on the Cornell campus overlooking Cayuga Lake in central New York.

Across the Pacific in Oahu's lower Manoa Valley in Honolulu, students from Japan, Hawaii, China, Portugal, Korea study Asian relations and Oriental languages and culture at the University of Hawaii.

Every year some 300,000 Michigan residents study under Michigan State College's "continuing education program" that helps citizens do a better job. Secretaries, metermen, assessors, police recruits, home-economics teachers, truck drivers take refresher courses or learn new ideas in programs designed just for them on Michigan State's campus.

In the far north miners and housewives trek to the University of Alaska, only 100 miles south of the Arctic Circle, for winter short courses. Hundreds of others, scattered about Alaska's almost 600,000 square miles, study mining, fur farming, home economics, agriculture.

At New Jersey's Rutgers University, only land-grant college whose charter antedates the Revolution, Dr. Selman Waksman and associates study microbiology and carry on the science started by French chemist Louis Pasteur. Funds for the spotless $3,500,000 laboratory came from royalties earned by their discoveries of streptomycin and neomycin.

Like Michigan State, Pennsylvania State University is celebrating its 100th anniversary this year, still carrying on a wide instruction program in many fields, including agriculture, for millions of Pennsylvanians annually—embodying the aim of Morrill's Land-Grant Act.

References—*National Geographic Magazine*, Aug., 1953, "Beltsville Brings Science to the Farm"; March, 1952, "Work-hard, Play-hard Michigan"; Nov., 1948, "4-H Boys and Girls Grow More Food."

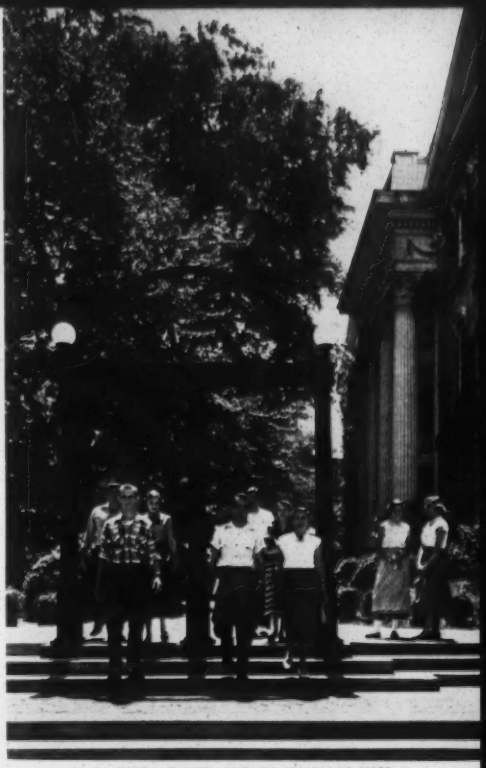
Future Farmers of America Take Time out for Lunch During a Convention at Kansas State College. Land-Grant Institutions Still Emphasize Farm-Youth Training

CHRIS BUTLER

went into farmers' fields to help solve problems of erosion, seed varieties, irrigation. Home demonstration agents worked with farm wives and helped lighten household chores.

More than 12,000 workers now instruct some 30,000,000 persons living on farms or in rural areas—the world's largest adult-education program.

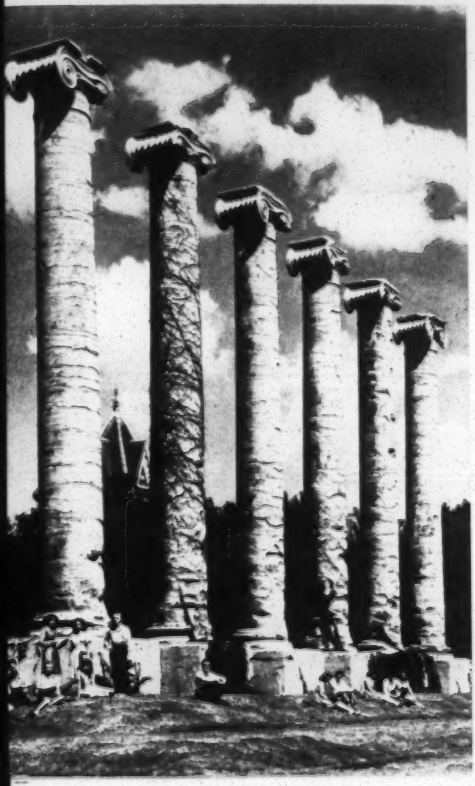
Today 69 land-grant colleges dot the mainland United States, Hawaii, Alaska, and Puerto Rico—a network unequalled by any other country—fulfillment of Congressman Morrill's dream. Besides income from State treasuries and their original land grants, these colleges share $40,000,000 in United States funds annually.



HOWELL WALKER, NATIONAL GEOGRAPHIC STAFF

An Iron Arch, Designed from Part of the State Seal, Forms a Gateway to the University of Georgia (right). University of Missouri Traditions Center Around "The Columns," Remaining after an 1890's Fire.

NATIONAL GEOGRAPHIC PHOTOGRAPHER RICHARD H. STEWART



Colleges learned their programs for teaching agriculture and engineering could be turned into many specialized fields as more and more of the country's population moved from farming into science, industry, commerce. Students in many land-grant colleges today work side by side with Government scientists in laboratories on campus.

For example, the University of Maryland's new Glenn L. Martin Institute of Technology became a training ground for engineering students as well as a center for Government projects in aeronautics.

General Electric's scientists and Cornell University instructors together have planned work on research problems in a huge advanced-electronics center. Their purpose: To fulfill needs of industry and the armed forces for more information about guided missiles, electronics counter-measurers, and infrared sys-

Nauru Islanders Seek New Pacific Paradise

Most people like the idea of living on a tropical Pacific island. The inhabitants of Nauru, an eight-square-mile pin point on the Equator, just west of the south Pacific's Gilbert Islands, want to move away.

Reason: Nauru's soil consists mostly of phosphate. Sold chiefly to Australia at the rate of 1,000,000 tons a year, it becomes superphosphate and fertilizes many millions of farmland acres. But in its natural form, Nauru's phosphate won't grow anything. Since the deposits will be worked out in an estimated 20 to 30 years, Nauruans will have to leave.

Nauru's name means "pleasant," a good word for the way of life the island offers. Some 1,500 natives live comfortably in the one comparatively fertile corner of the island, reaping high wages for their work in the phosphate deposits. Australian and New Zealand company officials and engineers play tennis and golf under balmy Pacific skies, swim, go to the movies or library. Since World War II, when the island was occupied by Japan, Nauru has been under United Nations trusteeship administered by Australia.

As the phosphate diggings approach their end, Nauruans are anxious to emulate their neighbors, the Ocean Islanders, who, faced with the same problem, bought a new island in the Fiji group and settled on it. Ocean Island also was a phosphate producer and its natives, accustomed to buying food, had to learn to grow crops in their new home's fertile soil.

Nauruans are willing to learn, too, but fertile Pacific isles aren't often for sale these days—as many a would-be beachcomber knows.

Reference—Nauru may be located on the Society's map of the Pacific Ocean.

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